**INTRODUCTION TO COMPUTING**

**(EL-116)**



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## ITC LAB PROJECT REPORT

**TIC TAC TOE Game**

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# Introduction:

The following is a Tic Tac Toe game. Tic-tac-toe is a paper-and-pencil game for two players, *X* and *O*, who take turns marking the spaces in a 3×3 grid. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row wins the game. Players soon discover that the best play from both parties leads to a draw. Hence, tic-tac-toe is most often played by young children.

This game is made with the C++ coding on visual studio to play on the console window. The game starts with the name on top and the menu at the bottom. It gives a sufficient menu for the players to access before they play the game. By pressing ‘1’: players can start playing the game with “player 1” indicated as ‘X’ and “player 2” as ‘O’. Then by pressing the indicated keys on the board, either of the individual players can mark the empty spaces. The game will decide who wins and who doesn’t. By pressing ‘2’: players can access the instructions and then by pressing ‘0’ they can return to the menu. By pressing ‘3’: players can access the page where they can change the colour of the game. They can further select from the menu by pressing the appropriate key. By pressing ‘4’: players can exit the game.

# How it works?

# Flow Chart:

# Program:

#include<iostream>

#include<windows.h>

using namespace std;

int start();

void board();

void instruction();

void colourchg();

int checkwin();

char sqr[10] = { '0','1','2','3','4','5','6','7','8','9' };

char sqr1[10] = { '0','1','2','3','4','5','6','7','8','9' };

void main()

{

int player = 1, i = 0;

char x = '0', put, choice;

while (x != '4')

{

x = start();

if (x == '1')

{

do

{

board();

if (player % 2 == true)

player = 1;

else

player = 2;

cout << "\nPLAYER " << player << ", enter a number= ";

cin >> choice;

if (player == true)

put = 'X';

else

put = 'O';

if (choice == '1' && sqr[1] == '1')

sqr[1] = put;

else if (choice == '2' && sqr[2] == '2')

sqr[2] = put;

else if (choice == '3' && sqr[3] == '3')

sqr[3] = put;

else if (choice == '4' && sqr[4] == '4')

sqr[4] = put;

else if (choice == '5' && sqr[5] == '5')

sqr[5] = put;

else if (choice == '6' && sqr[6] == '6')

sqr[6] = put;

else if (choice == '7' && sqr[7] == '7')

sqr[7] = put;

else if (choice == '8' && sqr[8] == '8')

sqr[8] = put;

else if (choice == '9' && sqr[9] == '9')

sqr[9] = put;

else

{

cout << "INVALID MOVE ";

Sleep(500);

}

i = checkwin();

player++;

} while (i == -1);

board();

if (i == 1)

cout << "CONGRATS PLAYER " << --player << " WINS " << endl;

else

cout << "GAME DRAWN" << endl;

for (int k = 0; k < 10; k++)

{

sqr[k] = sqr1[k];

}

Sleep(3500);

system("cls");

}

else if (x == '2')

{

instruction();

}

else if (x == '3')

{

colourchg();

}

else if (x == '4')

{

Sleep(700);

}

else

{

cout << "INVALID ENTRY.";

Sleep(700);

system("cls");

}

}

}

int start()

{

char xx;

cout << "\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_" << endl;

cout << " | | | | | | | | | | |" << endl;

cout << " | | | | |-----| | | | | |---" << endl;

cout << " | \_\_|\_\_ |\_\_\_\_\_ | | | |\_\_\_\_\_ | |\_\_\_\_\_| |\_\_\_\_\_" << endl;

cout << "\n\n\n\n";

cout << "PRESS" << endl;

cout << "1: NEW GAME" << endl;

cout << "2: INSTRUCTIONS" << endl;

cout << "3: CHANGE COLOUR" << endl;

cout << "4: EXIT" << endl;

cin >> xx;

return xx;

}

void board()

{

system("cls");

cout << "Player 1 (X) - Player 2 (O)" << endl << endl;

cout << endl;

cout << " | | " << endl;

cout << " " << sqr[1] << " | " << sqr[2] << " | " << sqr[3] << endl;

cout << " \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_" << endl;

cout << " | | " << endl;

cout << " " << sqr[4] << " | " << sqr[5] << " | " << sqr[6] << endl;

cout << " \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_" << endl;

cout << " | | " << endl;

cout << " " << sqr[7] << " | " << sqr[8] << " | " << sqr[9] << endl;

cout << " | | " << endl << endl;

}

void instruction()

{

system("cls");

char a = '1';

while (a != '0')

{

cout << " INSTRUCTIONS: \n\n";

cout << "1. ENTER THE NUMBER BETWEEN 1-9 WHICH YOU WANT TO SELECT " << endl;

cout << "2. YOU CANNOT SELECT SAME NUMBER TWICE" << endl;

cout << "3. YOU CANNOT CHANGE THE POSITION AFTER YOU HAVE SELECTED" << endl;

cout << "4. THE PERSON WHO MAKE 3 IN A ROW, COLUMN OR DIAGONAL SHALL WIN" << endl;

cout << "PRESS 0 FOR BACK \n";

cin >> a;

system("cls");

}

}

void colourchg()

{

system("cls");

char i;

for (;;)

{

cout << "PRESS \n 1- BLUE \n 2- GREEN \n 3- RED \n 4- PURPLE \n 5- YELLOW \n 6- WHITE \n";

cin >> i;

if (i == '1')

{

system("COLOR 1");

break;

}

else if (i == '2')

{

system("COLOR 2");

break;

}

else if (i == '3')

{

system("COLOR 4");

break;

}

else if (i == '4')

{

system("COLOR 5");

break;

}

else if (i == '5')

{

system("COLOR 6");

break;

}

else if (i == '6')

{

system("COLOR 7");

break;

}

else

{

cout << "ENTER VALID KEY." << endl;

Sleep(500);

system("cls");

}

}

system("cls");

}

int checkwin()

{

if (sqr[1] == sqr[2] && sqr[2] == sqr[3])

return 1;

else if (sqr[4] == sqr[5] && sqr[5] == sqr[6])

return 1;

else if (sqr[7] == sqr[8] && sqr[8] == sqr[9])

return 1;

else if (sqr[1] == sqr[4] && sqr[4] == sqr[7])

return 1;

else if (sqr[2] == sqr[5] && sqr[5] == sqr[8])

return 1;

else if (sqr[3] == sqr[6] && sqr[6] == sqr[9])

return 1;

else if (sqr[1] == sqr[5] && sqr[5] == sqr[9])

return 1;

else if (sqr[3] == sqr[5] && sqr[5] == sqr[7])

return 1;

else if (sqr[1] != '1' && sqr[2] != '2' && sqr[3] != '3' && sqr[4] != '4' && sqr[5] != '5' && sqr[6] != '6' && sqr[7] != '7' && sqr[8] != '8' && sqr[9] != '9')

return 0;

else

return -1;

}

# Sample Outputs:

